THE SYNONYMIZATION OF *TRIODOS* K. H. BARNARD WITH *AMPELISCA* KRÖYER (CRUSTACEA, AMPHIPODA)

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(With 3 figures)

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ABSTRACT

The genus *Triodos* K. H. Barnard 1916, is re-examined and synonymized with the genus *Ampelisca* Kröyer, 1842 (family Ampeliscidae). The type species, *Triodos insignis* K. H. Barnard, 1916, is redescribed and figured and removed to *Ampelisca* as a valid species. The validity of the genus *Byblis* is discussed.

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INTRODUCTION

During our work on the revision of the families and genera of the World Gammaridea (monograph in preparation), the validity of two genera in the family Ampeliscidae was studied.

We re-examined the type species of the genus *Triodos*, *T. insignis* K. H. Barnard, 1916, described from South Africa, because the original description was poorly illustrated and the exact taxonomic position of the genus was uncertain.

Based on our study, *Triodos insignis* is removed to the genus *Ampelisca* Kröyer as a valid species, and the genus *Triodos* K. H. Barnard, 1916, is synonymized with *Ampelisca* Kröyer.

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Ampelisca Kröyer, **new synonymy**

Ampelisca Kröyer, 1842: 154 (*Ampelisca eschrichtii* Kröyer, 1842, monotypy). Stebbing, 1906: 98. J. L. Barnard, 1960: 3 (including key to species). G. S. Karaman, 1975: 5.

Pseudoptalmus [*sic*] Stimpson, 1853: 57 (*Pseudoptalmus pelagicus* Stimpson, 1853, here selected, = *Ampelisca eschrichtii* Kröyer, 1842).

Araneops Costa, 1853: 169 (*Araneops diadema* Costa, 1853, here selected).

Tetromatus Bate, 1857: 139 (*Tetromatus typicus* Bate, 1857, here selected).

Triodos K. H. Barnard, 1916: 140 (*Triodos insignis* K. H. Barnard, 1916, original designation) [new synonym].

INVALIDITY OF *TRIODOS*

K. H. Barnard (1916) described *Triodos insignis* a new genus and species from South Africa (off the Umhloti River, depth 100 fathoms).

At p. 140 he wrote that this genus 'combines in a remarkable manner the characters of the three hitherto recognized genera of Ampeliscidae'. Because this species was very poorly figured, later workers considered the head to have a produced anteroventral corner and pereopod 7 to be like that in *Ampelisca*.

After detailed examination of *Triodos insignis* from new material, it was evident that it belongs to the genus *Ampelisca* with a short head such as that of other species (*A. rubella* Costa, 1864, etc.). All other taxonomic characters of *T. insignis* are identical with those of members in the genus *Ampelisca*.

The distoposterior lobe of article 2 on pereopod 7 has at the anteroventral margin of the lobe one seta more than is usual in the genus *Ampelisca*, but *Ampelisca rubella*, and *Ampelisca spinimana* Chevreux, 1887*a* also have one to two setae at the anteroventral corner on the distoposterior lobe of article 2 on pereopod 7. For this reason, the pilosity of pereopod 7 in *T. insignis* belongs to the *Ampelisca* form.

Ampelisca insignis (K. H. Barnard), **new combination**

Figs 1–3

Triodos insignis K. H. Barnard, 1916: 140, pl. 26 (figs 8–10). J. L. Barnard, 1969: 132. Griffiths, 1974: 223; 1975: 104.

Description

Female

8,6 mm with nonsetose oostegites. Body smooth except last metasomite and urosomites; last metasomite with two dorsoposterior plumose setae (Fig. 3A); urosomites 1–2 elevated, triangular in lateral view (Fig. 3E), laterally compressed, bearing one row of short plumose setae along each lateral side; urosomites 2–3 coalesced.

Coxae 1–4 longer than broad, with convex distal (= ventral) margin provided with one row of long plumose setae, without distinct marginal notch. Coxa 1 dilated distally (Fig. 2A), coxa 4 with well-developed distoposterior lobe produced sharply in proximal part (so that lateral margins of coxa 4 are not parallel (Fig. 2D)).

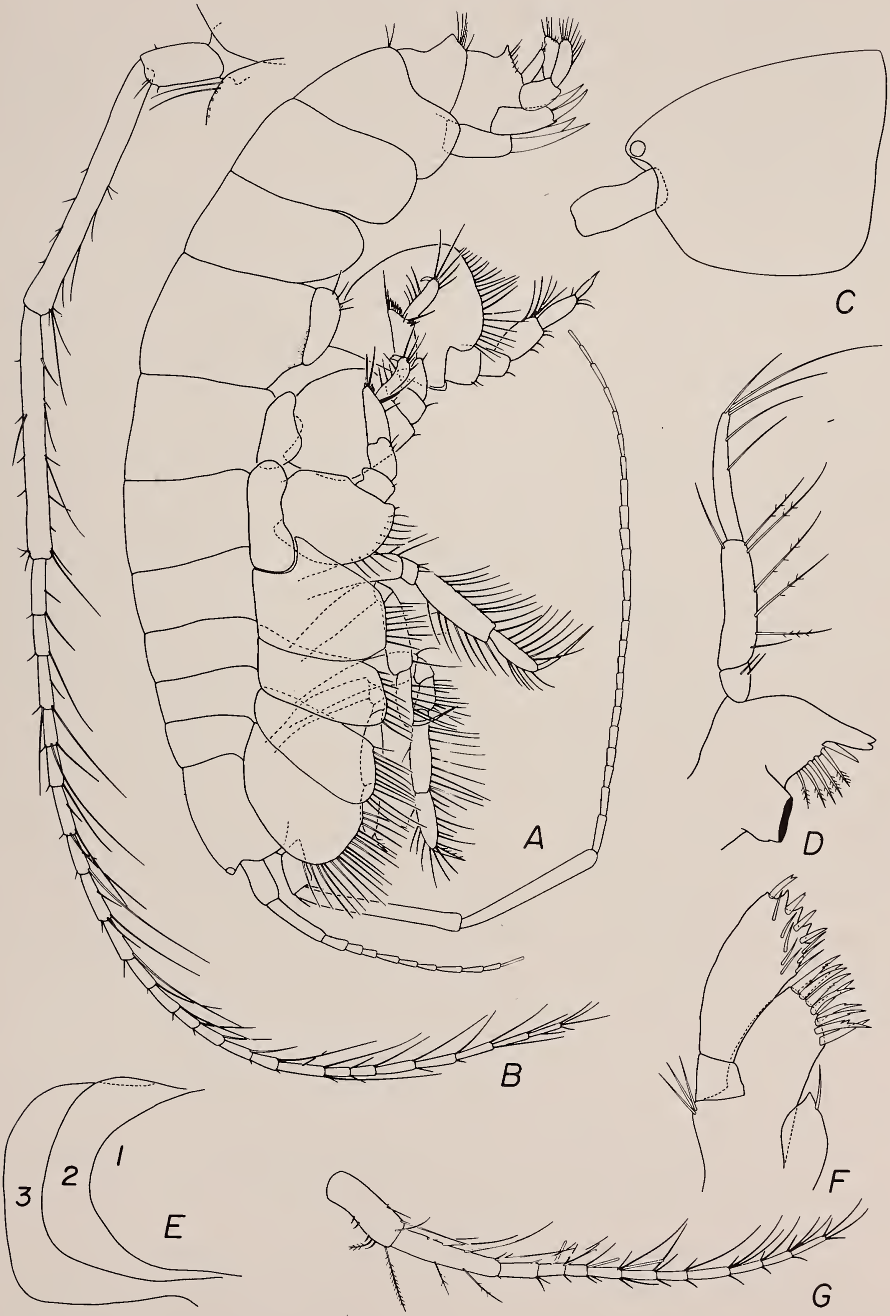

Fig. 1. *Ampelisca insignis* (K. H. Barnard), female 8,6 mm. A. Lateral body. B. Antenna 2. C. Lateral head. D. Left Mandible. E. Epimera 1–3, number placed near posteroventral corner of each. F. Maxilla 1 (11th spine on outer plate hidden). G. Antenna 1.

Epimeral plates 1–3 smooth, nearly subrounded (Fig. 1E).

Head longer than first two pereonites combined, obtuse (Fig. 1C), scarcely longer than tall, with short rostrum; lateral cephalic lobes obtuse, straight, anteroventral corner not produced nor pointed, like those in many other *Ampelisca* species (*A. rubella*, etc.). One corneal lens present on each side near dorsoanterior tip of head.

Antenna 1 short, slender, slightly exceeding peduncular article 4 of antenna 2 (Fig. 1A); peduncular article 2 of antenna 1 slightly longer than article 1, article 3 short; accessory flagellum absent; main flagellum longer than peduncle, consisting of 9 articles, some of them with one aesthetasc each (Fig. 1G).

Antenna 2 long, nearly as long as body: peduncular article 3 short, peduncular article 4 scarcely longer than 5, slender (Fig. 1B); flagellum 23-articulate, bearing long setae.

Labrum incised distally (Fig. 2F), broader than long (tall). Labium normal, with well-developed inner lobes (Fig. 2B).

Mandible with well-developed strong triturative molar, incisor toothed; palp 3-articulate, article 1 short, articles 2–3 subequal in length, setose, non-falciform, not dilated distally (Fig. 1D).

Maxilla 1: inner lobe with 1 simple seta, outer lobe with 11 spines (Fig. 1F showing only ten), provided with one to four lateral teeth each; palp 2-articulate, second article dilated distally, provided with distal teeth accompanied by several spines and subdistal setae.

Maxilla 2 with narrowed lobes, inner lobe without dorsal oblique row of setae (Fig. 2E).

Maxilliped: inner lobe short, with two distal spines intermixed with several plumose setae; outer lobe reaching tip of second palp article, bearing one row of strong spines along inferior margin; palp 4-articulate, palp article 3 not lobed, article 4 with nail shorter than remaining part of article (Fig. 2C).

Gnathopods 1–2 linear, simple, gnathopod 1 shorter than gnathopod 2 (Fig. 2A, I). Gnathopod 1: article 5 longer than 6, densely setose along margins; article 6 tapering distally, with dactyl shorter than article 6, bearing 4 setae along inferior margin and 1 seta at outer margin.

Gnathopod 2: article 5 linear, long, densely setose; article 6 much shorter than 5, tapering distally, dactyl with five setae along inferior margin and with one seta at outer margin (Fig. 2I).

Pereopod 3 linear, with articles 4–6 bearing long plumose setae along both margins; article 4 slightly inflated; dactyl slender, straight, longer than article 6 (Fig. 3B).

Pereopod 4 like that of pereopod 3, but slightly longer (Fig. 2D). Pereopod 5: article 2 ovoid, with short distoposterior lobe and with smooth posterior margin, anterior margin with one row of plumose setae; articles 3–4 short (Fig. 2G); article 5 produced distoposteriorly, bearing one row of short spines on apex; article 6 with long distal setae, dactyl short, nail-shaped, with two dorsal teeth.

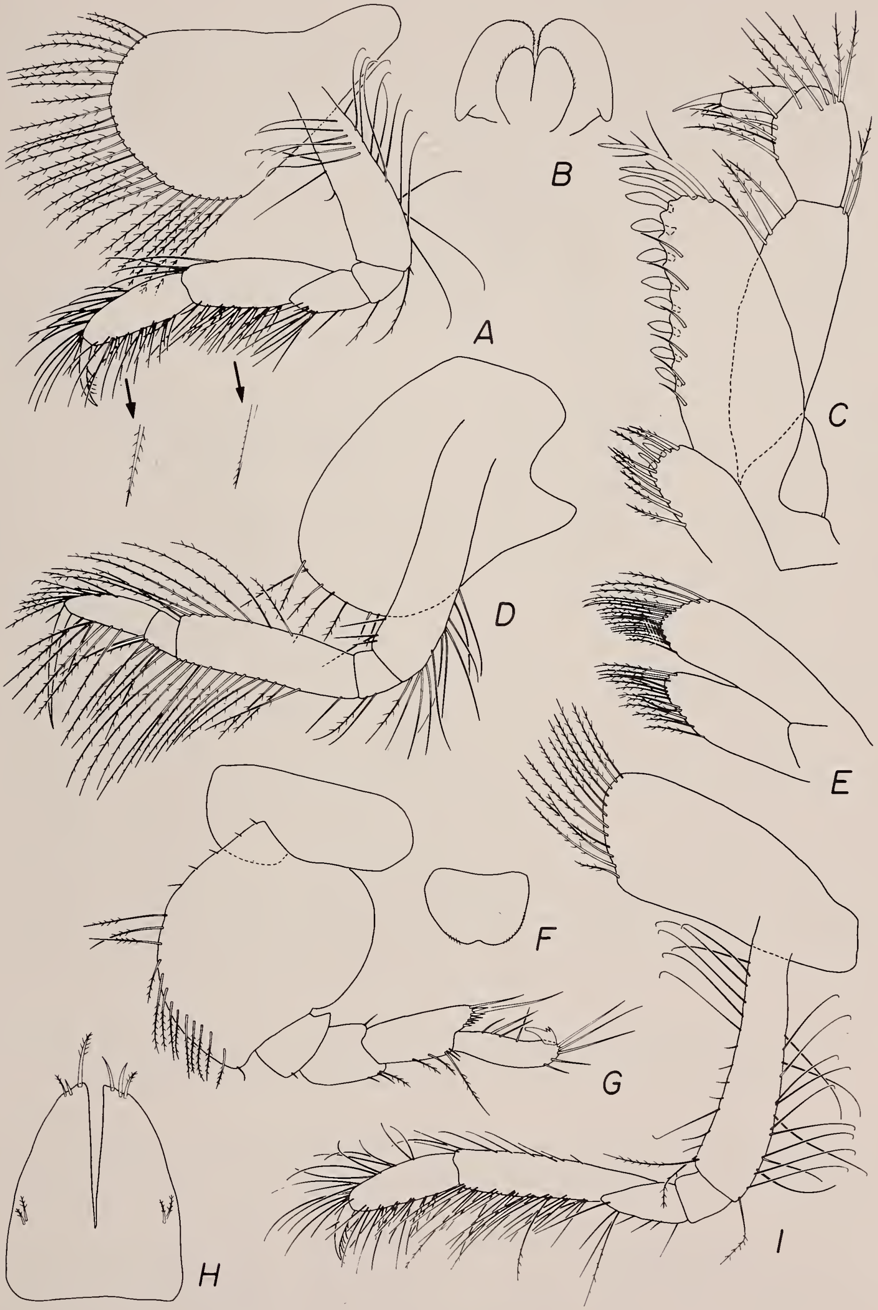

Fig. 2. *Ampelisca insignis* (K. H. Barnard), female 8,6 mm. A. Gnathopod 1. B. Lower lip. C. Maxilliped. D. Pereopod 4. E. Maxilla 2. F. Upper lip. G. Pereopod 5. H. Telson. I. Gnathopod 2. D and G = medial view.

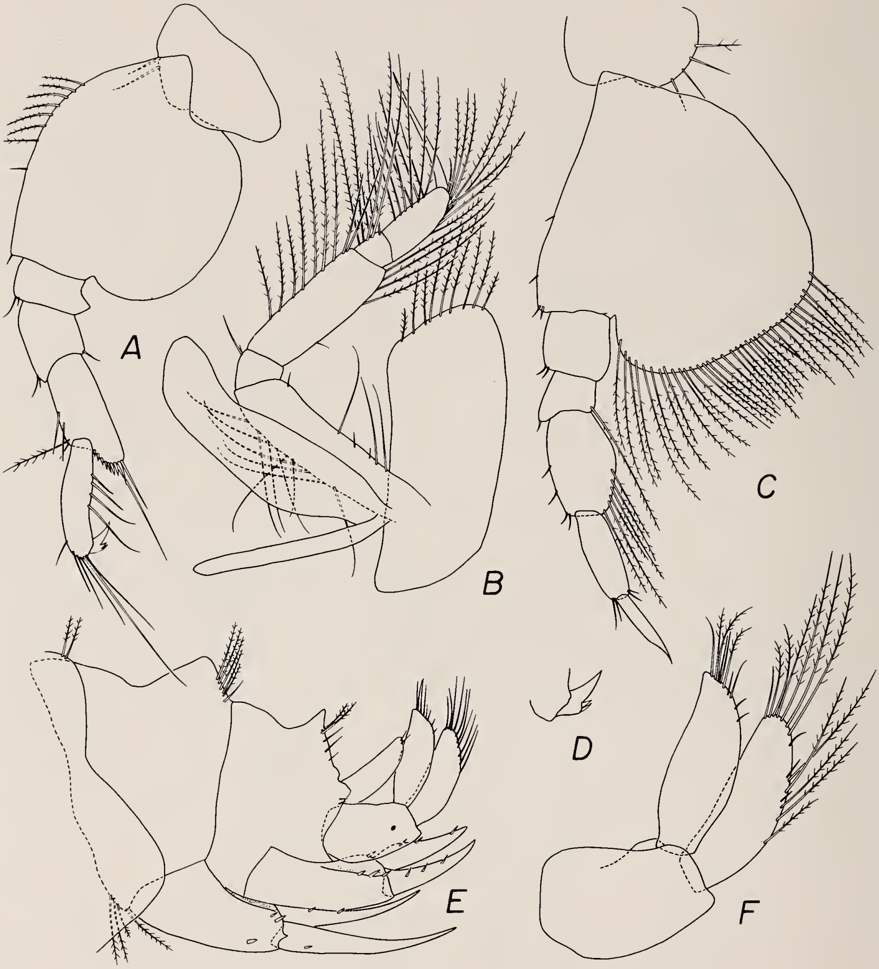

Fig. 3. *Ampelisca insignis* (K. H. Barnard), female 8,6 mm. A. Pereopod 6. B. Pereopod 3. C. Pereopod 7. D. Dactyl of pereopod 6. E. Lateral urosome (inner ramus of uropod 1 pulled laterally to show spines). F. Uropod 3. A, B and C = medial view.

Pereopod 6: article 2 with stronger distoposterior lobe and less setose anterior margin than those of pereopod 5; articles 3–7 like those of pereopod 5 (Fig. 3A).

Pereopod 7: nearly as long as pereopod 6, but of different shape: article 2 very large, dilated medially, with large distoposterior lobe reaching distal tip of article 3 (Fig. 3C), bearing numerous plumose setae along posterior and ventral margins; article 3 short; article 4 shorter than 3, poorly produced at distoanterior tip and bearing one long distoposterior seta; article 5 slightly inflated, longer than broad, bearing one row of plumose setae along distoposterior margin;

article 6 slightly shorter and narrower than 5, almost smooth; dactyl narrow, almost as long as article 6, spiniform.

Pleopods well developed, normal, with two retinacula each.

Uropods 1–2 short. Uropod 1: peduncle stout, poorly spinose (Fig. 3E), rami slender, pointed distally, almost smooth, outer ramus slightly longer than inner. Uropod 1 only slightly exceeding apex of peduncle of uropod 2.

Uropod 2: peduncle stout, longer than rami, poorly spinose (Fig. 3E), rami nearly subequal, stouter than these on uropod 1, bearing spines along margins.

Uropod 3 short, but strongly exceeding apex of uropod 2: peduncle stout, scarcely shorter than ramus (Fig. 3F), smooth; rami almost subequal, bearing plumose setae along outer margin, uniarticulate, almost foliaceous, inner ramus tapering distally.

Telson much exceeding apex of peduncle on uropod 3, longer than broad, incised two-thirds of its length (Fig. 2H); each lobe tapering distally, bearing several setae, one pair of short sensory setae occurring on proximal part of each lobe.

Male

Unknown.

Variability

Epimeral plates 1–3 more or less subrounded.

Material examined

South Africa: WCD 229 Z, University of Cape Town, Ecological Survey, 4 specimens (figured female 8,6 mm).

Localities cited

South Africa: Umhloti River mouth NW 1/2 W., distant 15 miles (Natal), 100 fathoms (K. H. Barnard 1916, Griffiths 1974); summary below indicated by Griffiths (1975).

Distribution

Cape of Good Hope to Natal, South Africa, 183 m.

Remarks

Ampelisca misakiensis Dahl (1944) (and see Imbach 1969; Nagata 1965; Margulis 1968) is so close to *A. insignis* that it may, at best, represent only a subspecies. Imbach showed considerable variability in the head of *misakiensis* in the South China Sea, whereas Dahl described a head quite close to that of *insignis* in his Japanese material. If all the specimens identified by Imbach are indeed a single species, then a great deal of variability does exist and we therefore cannot find any distinctions between *insignis* and *misakiensis*. They have many characters in common which are rather unusual in *Ampelisca*: both urosomite 1 and urosomites 2–3 (fused) have a dorsal process (not in all Imbach specimens and poorly in Dahl figure), lateral facial spine(s) on peduncle of uropod 1, and setal creep on article 2 of pereopod 7 (setae creeping on to anterior margin of main lobe). The Japanese specimens and some specimens of the South China Sea from Imbach have the large rostrum on which the ocular lenses are found, but Imbach also shows specimens with the small rostral area as in *insignis*.

Before *misakiensis* is made a synonym of *insignis*, the South China Sea specimens of Imbach should once again be examined and work should be done on the occurrence of the species all through the Indian Ocean, from Indo-China to South Africa.

THE PROBLEM OF THE GENUS *BYBLIS*

Byblis Boeck, 1871, is very similar to *Ampelisca* but differs from the latter (*sensu auctorum*) by (i) article 2 of pereopod 7 being provided with setae at the ventroanterior margin near its conjunction with article 3; (ii) short, obtuse telson, incised up to half of its length; and (iii) the narrow article 7 of pereopod 7. These are further discussed below.

(i) The condition of pilosity on article 2 of pereopod 7 cannot be accepted as a distinctly valid character for separating the genera *Byblis* and *Ampelisca* from each other because of the observed transition in shape of this character among many species of both genera. For example, article 2 of pereopod 7 lacks any setae at the ventroanterior margin near its conjunction with article 3 (*Ampelisca sarsi* Chevreux, 1887*b*, *A. brevicornis* Costa, 1853, and many other species of *Ampelisca*); article 2 of pereopod 7 has one or two setae at the anteroventral margin near its conjunction with article 3 (*A. insignis*, *A. cucullata* J. L. Barnard, 1954, *A. misakiensis* Dahl, 1944, *A. iyoensis* Nagata, 1959; article 2 of pereopod 7 has numerous setae at the anteroventral margin near its conjuction with article 3, like species in the genus *Byblis* (for example *B. cyclops* Walker 1904, see Imbach 1969, pl. 5)

(ii) The shape of the telson seems to be the only good character at the moment separating the genera *Ampelisca* and *Byblis*. The telson in *Byblis* is as long as broad or broader than long, obtuse distally, incised maximally up to half of the telsonic length—although *Ampelisca agassizi* (Judd, 1896) (= *compressa* Homes, 1905, = *vera* J. L. Barnard, 1954, see Mills, 1967) also bears an obtuse telson; *Byblis serrata* Smith, 1873, also has a telson tapering distally like *Ampelisca*, but it is incised only half-way. On the other hand, *Ampelisca cyclops* Walker, 1904, has a telson like normal *Ampelisca* but incised scarcely more than half of its length.

(iii) The shape of article 7 (dactyl) of pereopod 7 is a problematic taxonomic character because of its large variability within the species and populations of *Ampelisca* (see *A. iyoensis* in Imbach, 1969).

For the moment, we retain *Ampelisca* and *Byblis* as distinct because of the different shapes of the telson, but the discovery of new species may require synonymization of the genera.

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